Geophysical Research Abstracts
Vol. 16, EGU2014-16068-2, 2014
EGU General Assembly 2014

Effect of the 'Vesulian events' on the foraminifers and ostracods in the Tethyan oceanic environment

Ágnes Görög (1), Roland Wernli (2), and Emőke Tóth (1)

(1) Paleontological Department, Eötvös University, Budapest, Hungary (gorog@ludens.elte.hu), (2) Geological and Paleontological Department, University of Geneva, Switzerland

In the north-western Tethys, at the Early/Late Bajocian boundary the 'Vesulian Unconformity' can be recognized as a result of carbonate crisis caused by transgression, culminating in the late Niortense –early Garantiana zones, followed by cooling and sudden regression. Later, in the Zigzag and Progracilis zones there was a regression causing also first-order crisis in the ammonite fauna.
Up to know only the early Bajocian (BARBIERI, 1964; MONOSTORI, 1995; WERNLI and GÖRÖG, 1999, 2000) and middle - late Bathonian (GÖRÖG and WERNLI, 2002) microfauna of the Tethyan oceanic realm were studied and we have no information about late Bajocian –early Bathonian interval.
The study of the foraminifera and ostracoda fauna from succession of Gyenespuszta, Bakony Mts, Hungary fill the gap of the records about these ages. The succession consists of ammonitico rosso type limestones, deposited on a submarine high. Despite the heavy condensation a relatively complete stratigraphic sequence (4 m) from the late Bajocian Humphresianum Zone up to late Bathonian Retrocostatum Zone could be identified based on ammonites (GALÁCZ, 1970, 1980), which is unique in the Tethys. From each of the 18 beds, thin sections were made for microfauna and microfacies studies and the microfauna were extracted by pure acetic acid.
In the ostracoda fauna is relative poor (13 species) consisting of smooth bairdids, *Paracypris*, *Bythocypris*, *Pontocyprella* and *Polycope* species. Several are known only from the Tethyan oceanic environment, while others occurred also in deep sublittoral – bathyal zone of the epicontinental areas.
In the foraminifera fauna 55 benthic and 6 plankton protoglobigerinids (*Globuligerina oxfordiana*, *G. bathoniana*, *G.* aff. *bathoniana*, *Conoglobigerina*? aff. *dagestanica*, *C.*? *avariformis* forma alta and sphaerica) could be identified. The fauna differs from the epicontinental ones basically in the ratio of the different forms. Throughout the succession the protoglobigerinids (10-70 %), spirillinids (5-80 %) and smooth walled lenticulinids (5-35 %) dominate, the agglutinated, porcelanous and ornamented lagenids are strongly subordinated, oberhauserellids are missing. The largest faunal changes happened in the Niortense-Garantiana zones and at the end of the Zigzag Zone, which reflected in: 1. drastic decreasing (about half) of diversity of the microfauna; 2. negative correlation of the protoglobigerinids and spirillinids: in the Garantiana—early Zigzag zones spirillinids dominate, while in the other part of the succession protoglobigerinids; 3. change in the protoglobigerinids association: the characteristic large sized (up to 400 μm) thick walled (40 μm compare with 8 μm thin walled forms) specimens disappeared in the Niortense-Garantiana zones, the large forms reoccur in the late Zigzag Zone, but with thin wall. Summarizing, the microfauna changes well coincide with the 'Vesulian events': During the transgression phase the existence of the thick walled protoglobigerinids can be interpret as a cortex bearing forms, adapting to the deep water mode of life. After the cooling and the regression these forms disappeared and only the shallow water dweller smaller forms remained. From the late Zigzag Zone a continuous deepening went on indicating by the appearance of the large probably deep dweller protoglobigerinids. Thus the thick walled protoglobigerinids are known only from the late Aalenian up to the Garantiana Zone, and can be use as a good marker for this interval. The microfauna of the Gyenespuszta succession provided the first evidence of the influence of the 'Vesulian events' on the Tethyan oceanic environment.